

## Locus Learning Summer Camp Curriculum

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### Grade 6: Abstract Math & Number Theory

Day	Week 1: Number Systems	Week 2: Algebra Basics	Week 3: Ratios & Proportions	Week 4: Integers
Mon	Large Numbers & Est.	Intro to Variables	Concept of Ratio	Understanding Negative Nos.
Tue	Prime Factorization	Translating to Algebra	Equivalent Ratios	Integers on a Number Line
Wed	HCF Word Problems	Evaluating Expressions	The Unitary Method	Addition of Integers
Thu	LCM Word Problems	Concept of Equality	Complex Unitary Problems	Subtraction of Integers
Fri	Mixed HCF/LCM	Solving Linear Equations	Real-world Proportions	Mixed Integer Operations
Sat	Mega Challenge: Puzzles	Mega Challenge: Equations	Mega Challenge: Speed/Dist	Mega Challenge: Series

### Grade 7: Expanding the Toolkit

Day	Week 1: Integers & Fractions	Week 2: Algebraic Expressions	Week 3: Linear Equations	Week 4: Lines & Angles
Mon	Integer Multiplication	Terms & Coefficients	Intro to Transposition	Comp. & Supplementary
Tue	Integer Division	Like vs. Unlike Terms	Solving Eq. (Variables 1 side)	Adjacent & Vert. Opposite
Wed	Fraction Ops (Unlike)	Addition of Expressions	Solving Eq. (Fractions/Dec)	Transversals & Parallel Lines
Thu	Multiplying Fractions	Subtraction of Expressions	Word Problems: Consecutive	Angle Sum Property
Fri	Complex Fraction Problems	Using Expr. in Geometry	Word Problems: Age & Money	Exterior Angle Theorem
Sat	Mega Challenge: BODMAS	Mega Challenge: Logic	Mega Challenge: Eq. Design	Mega Challenge: Angles

### Grade 8: The Pre-Olympiad Core

Day	Week 1: Exponents	Week 2: Advanced Linear Eq.	Week 3: Algebraic Identities	Week 4: Quadrilaterals
Mon	Laws of Exponents	Eq. with Variables Both Sides	Multiplication of Binomials	Polygons & Int. Angle Sum
Tue	Power of a Power	Eq. reducible to Linear	Identity 1: $(a+b)^2$	Properties of Parallelograms
Wed	Standard Form	Complex Age Word Problems	Identity 2: $(a-b)^2$	Properties of Rhombus/Kite
Thu	Simplifying Expressions	2-Digit Number Problems	Identity 3: $a^2-b^2$	Properties of Rect/Squares
Fri	Exponent Equations	Upstream/Downstream Basics	Evaluating with Identities	Logical Deduction
Sat	Mega Challenge: Exponents	Mega Challenge: Logic	Mega Challenge: Polynomials	Mega Challenge: Figures

### Grade 9: The Foundation Builder

Day	Week 1: Real Numbers & Surds	Week 2: Polynomial Factorization	Week 3: Coord Geo & Linear Eq	Week 4: Congruence & Proofs
Mon	Irrational Numbers	Zeros of a Polynomial	Cartesian Plane & Plotting	Axioms of Lines & Angles
Tue	Ops on Real Numbers	The Remainder Theorem	Linear Eq in 2 Variables	Intro to Congruence (SAS, ASA)
Wed	Rationalization (Monomial)	The Factor Theorem	Graphing Linear Equations	Congruence (SSS, RHS)
Thu	Rationalization (Binomial)	Factorizing Quadratics	Lines Parallel to Axes	Inequalities in a Triangle
Fri	Laws of Exponents (Reals)	Factorizing Cubics	Area of Triangles on Plane	Multi-step Geometric Proofs
Sat	Mega Challenge: Surds	Mega Challenge: Factors	Mega Challenge: Intersections	Mega Challenge: Proof Logic